



**Rules and  
Regulations for  
the Classification of  
Special Service Craft,  
July 2008**

**Notice No. 6**

Effective Date of Latest  
Amendments:

See page 1

Issue date: March 2009

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**RULES AND REGULATIONS FOR THE  
CLASSIFICATION OF SPECIAL SERVICE CRAFT,  
*July 2008***

**Notice No. 6**

This Notice contains amendments within the following Sections of the *Rules and Regulations for the Classification of Special Service Craft, July 2008*. The amendments are effective on the dates shown:

<b><i>Part</i></b>	<b><i>Chapter</i></b>	<b><i>Section</i></b>	<b><i>Effective date</i></b>
8	5	2	Corrigendum
10	1	15	Corrigendum
15	4	1, 5	1 July 2009
16	1	2	1 July 2009
16	2	1, 10, 14, 16, 19	1 July 2009

It will be noted that the amendments also include corrigenda, which are effective from the date of this Notice.

The *Rules and Regulations for the Classification of Special Service Craft, July 2008* are to be read in conjunction with this Notice No. 6. The status of the Rules is now:

Rules for Special Service Craft	Effective date:	July 2008
Notice No. 1	Effective dates:	1 August 2008 & Corrigenda
Notice No. 2	Effective dates:	1 August 2008 & 1 November 2008
Notice No. 3	Effective dates:	5 August 2008 & Corrigendum
Notice No. 4	Effective dates:	1 January 2009 & Corrigendum
Notice No. 5	Effective dates:	1 March 2009 & Corrigenda
Notice No. 6	Effective dates:	1 July 2009 & Corrigenda

## Part 8, Chapter 5 Special Features

### CORRIGENDUM

#### ■ Section 2 Special features

##### 2.3 Foil support arrangements

2.3.2 The design and performance of the lifting surface is outside the scope of classification. However, when submitting structural plans for the hull connection installation, the designer/Builder is to define:

- (a) Operating mode, i.e. fully submerged or surface piercing.
- (b) Maximum operational speed for which approval is sought.
- (c) Maximum, direct, bending, shear and torque loads generated by the foil at the point of attachment(s).
- (d) The type of profile or section used, e.g. N.A.C.A.
- (e) Supply of lift/drag profile.
- (f) If the foil is fixed, ~~moveable~~ movable or retractable.
- (g) If the foil is fitted with control surfaces.
- (h) If the vertical leg(s) act as a rudder(s).
- (i) If shaft liners are carried to the foils at which support arrangements are provided.
- (k) If water intakes/scoops are fitted.
- (l) If propulsion units are fitted.

## Part 10, Chapter 1 Diesel Engines

### CORRIGENDUM

#### ■ Section 15 Type testing procedure for crankcase explosion relief valves

##### 15.9 The ~~Report~~ report

## Part 15, Chapter 4

### Pressure Plant

Effective date 1 July 2009

#### ■ Section 1

#### General requirements

#### 1.3 Materials

1.3.1 ~~Materials used in the construction are to be manufactured and tested in accordance with the requirements of the Rules for Materials.~~ Materials used in the construction of Class 1, 2/1 and 2/2 pressure vessels are to be manufactured, tested and certified in accordance with the requirements of the Rules for Materials. Materials used in the construction of Class 3 pressure vessels may be in accordance with the requirements of an acceptable National or International Standard. The manufacturer's certificate will be accepted in lieu of LR's material certificate for such materials.

1.3.2 The specified minimum tensile strength of carbon and carbon-manganese steel plates, pipes, forgings and castings is to be within the following general limits:

- (a) For seamless and Class 1 and Class 2/1 fusion welded pressure vessels:  
340 to 520 N/mm<sup>2</sup>.
- (b) For Class 2/2 and ~~where required~~ Class 3 fusion welded pressure vessels:  
340 to 430 N/mm<sup>2</sup>.

#### ■ Section 5

#### Standpipes and branches

#### 5.1 Minimum thickness

5.1.1 The minimum wall thickness,  $t$ , of standpipes and branches is to be not less than the greater of the two values determined by the following formulae, making such additions as may be necessary on account of bending, static loads and vibrations:

$$t = \frac{p D_o}{20\sigma + p} + 0,75 \text{ mm}$$

$$t = 0,04D_o + 2,5 \text{ mm}$$

$$t = 0,015D_o + 3,2 \text{ mm}$$

where

$t$ ,  $p$ ,  $D_o$  and  $\sigma$  are defined in 1.7.

If the second formula applies, the thickness need only be maintained for a length,  $L$ , from the outside surface of the vessel, but need not extend past the first connection, butt weld or flange, where:

$$L = 3,5 \sqrt{D_o t} \text{ mm}$$

## Part 16, Chapter 1

### Control Engineering Systems

Effective date 1 July 2009

#### ■ Section 2

#### Essential features for control, alarm and safety systems

#### 2.4 Safety systems, general requirements

2.4.1 Where safety systems are provided, the requirements of 2.4.2 to 2.4.12 are to be satisfied. The requirements of this sub-Section apply, where relevant, to the safety systems installed on the equipment defined in 1.2.3, including those provided in addition to those safeguards required by other Sections of the Rules.

#### 2.9 Fixed water-based local application fire-fighting systems

2.9.3 Activation of a system is not to result in loss of electrical power or reduction of the manoeuvrability of the craft and is not to require confirmation of space evacuation or sealing, *see also* Ch 2, 16.3.12.

2.9.4 System zones and protected areas are to be arranged to allow essential services to be provided by machinery and/or equipment located outside areas affected by direct spray or extended water in the event of a system activation, where the machinery and/or equipment is duplicated or otherwise replicated to provide redundancy.

~~2.9.4~~ 2.9.5 A control panel is to be provided for managing actions such as opening of valves, starting of pumps and sounding of alarms and processing information from detectors. This panel is to be independent of the fire detection control unit required by 2.8.

~~2.9.5~~ 2.9.6 Alarms are to be initiated upon activation of a system and are to indicate the specific zone released at the control panel. Alarms are to be provided in each protected space, at an attended machinery control station and in the wheelhouse. The audible alarm is to be distinguishable from other safety system alarms.

2.9.7 A failure in a manual system activation switch circuit is not to prevent system activation using other installed manual system activation switches or, where installed, automatic activation. The means of activation are to be provided with self-monitoring facilities which will activate an alarm at an attended control station in the event of failure detection.

~~2.9.6~~ 2.9.8 Where, additionally, the system is required to be capable of automatic release, the arrangements are to be in accordance with ~~2.9.7 to 2.9.9~~ 2.9.8 to 2.9.12.

~~2.9.7~~ 2.9.9 A minimum of two fire detectors ~~is~~ are to be provided for each protected area. One is to be a flame detector and the other is to be a smoke or heat detector, as considered appropriate to the nature of the risk and ambient conditions. The system is to be activated upon detection by two of the detectors. A fault in one detector is to initiate an alarm at an attended control station and is not to inhibit activation of the system under the control of the other detector or manually.

2.9.10 The fire detectors are to be arranged (located, oriented, guarded, etc.) to ensure that a fire in one protected area will not result in the inadvertent automatic activation of a system for another protected area. Guards or barriers provided to comply with this requirement are not to reduce the ability to detect a fire in the protected area.

~~2.9.8~~ 2.9.11 A fire detection alarm system panel in accordance with 2.8 may be used for receiving fire detection signals. Separate loops are not required provided that the address of the initiating device can be identified at the control panel. The received signals are then to be sent to the control panel required by ~~2.9.4~~ 2.9.5 for processing and action.

~~2.9.9~~ 2.9.12 The system's fire detection systems and control units are to meet the performance criteria stipulated by the National Administration and ~~satisfy the requirements of LR's Type Approval System~~ are to be Type Approved in accordance with *Test Specification Number 1 (2002)* given in LR's Type Approval System for an environmental category appropriate for the locations in which they are intended to operate.

## Part 16, Chapter 2

### Electrical Engineering

Effective date 1 July 2009

#### ■ Section 1

#### General requirements

##### 1.2 Plans

1.2.1 At least three copies of the plans and particulars in 1.2.2 to 1.2.8 are to be submitted for consideration. Single copies only are required of plans in ~~1.2.9 to 1.2.12~~ 1.2.10 to 1.2.13. Additional copies are to be submitted when requested.

1.2.8 Details of electrically-operated fire, craft, crew and passenger emergency safety systems which are to include typical single line diagrams and arrangements, showing main vertical and, where applicable, horizontal fire zones and the location of equipment and cable routes, **including identification of relevant high risk fire areas**, to be employed for:

- (a) emergency lighting;
- (b) accommodation fire detection, alarm and extinction systems;
- (c) fixed water-based local application fire-fighting systems;
- (d) public address system;
- (e) general alarm;
- (f) watertight doors, shell doors and other electrically operated closing appliances; **and**
- (g) low location lighting.

NOTE

A general arrangement plan of the complete craft showing the main vertical fire zones and the location of equipment and cable routes, **including identification of relevant high risk fire areas**, for the above systems, is to be made available for the use of the Surveyor on board.

1.2.9 Evidence of the suitability of electrical and electronic equipment for use in protected areas and adjacent areas, as required by 16.3.11 and 16.3.12, including a schedule of electrical and electronic equipment located in protected areas and adjacent areas, and general arrangement plans showing the coverage of the protected areas and adjacent areas.

*Existing paragraphs 1.2.9 to 1.2.12 have been renumbered 1.2.10 to 1.2.13.*

##### 1.3 Surveys

1.3.3 For electric propulsion systems, in addition to the equipment listed in 1.3.2, the following equipment is to be surveyed by the Surveyors during manufacture and testing:

- exciters;
- filters;
- reactors;
- dynamic braking assemblies; and
- slip ring assemblies.

~~1.3.3~~ 1.3.4 All other electrical equipment, not specifically referenced in 1.3.2 **and** 1.3.3, intended for use for essential or emergency services is to be supplied with a manufacturer's works test certificate showing compliance with the constructional standard(s) as referenced by the relevant requirements of this Chapter.

##### 1.4 Additions or alterations

1.4.4 Where it is intended to replace an existing incandescent lamp type navigation light with a light emitting diode type navigation light, details are to be submitted for consideration that demonstrate compliance with 14.3. Light emitting diode type navigation light failure detection arrangements are to satisfy the requirements of 14.3.4 and 14.3.5.

##### 1.10 Location and construction

1.10.6 The minimum creepage and clearance distances provided for electrical connections, terminals and similar bare live parts are to be in accordance with a relevant International or National Standard for the equipment or apparatus concerned. In cases where the rated voltage is outside that given in the Standard or where no Standard is available, the minimum creepage and clearance distances provided are to be in accordance with 7.5. Details of alternatives proposals including supporting design rationale and demonstration may be submitted for consideration.

*Existing paragraphs 1.10.6 to 1.10.11 have been renumbered 1.10.7 to 1.10.12.*

#### ■ Section 10

#### Electrical cables and busbar trunking systems (busways)

##### 10.1 General

10.1.3 Electric cables for electric propulsion systems are to be Type Approved in accordance with LR's *Type Approval System Test Specification Number 3* or, alternatively, surveyed by the Surveyors during manufacture and testing to assess compliance with the applicable International or National Standards and application of an acceptable quality management system.

*Existing paragraphs 10.1.3 to 10.1.5 have been renumbered 10.1.4 to 10.1.6.*

## Part 16, Chapter 2

### 10.5 Construction

~~10.5.5~~ ~~Electric cables where it is required that their construction~~ Where it is required that the construction of electrical cables includes metallic sheaths, armouring or braids are to be provided with an overall impervious sheath or other means to protect the metallic elements against corrosion, ~~see also 10.8.7 and 10.8.8.~~

~~10.5.6~~ 10.5.6 Where cables are installed in an area where contamination by oil is likely to occur, the oversheath is to be of an enhanced oil resistance grade.

~~10.5.6~~ 10.5.7 Where single core electric cables are used in circuits rated in excess of 20 Amps and are armoured the armour is to be of a non-magnetic material.

~~10.5.7~~ 10.5.8 Electric cables are to be constructed such that they are capable of withstanding the mechanical and thermal effects of the maximum short-circuit current which can flow in any part of the circuit in which they are installed, taking into consideration not only the time/current characteristics of the circuit protective device but also the peak value of the prospective short-circuit current. Where electric cables are to be used in circuits with a maximum short circuit current in excess of 70 kA, evidence is to be submitted for consideration when required demonstrating that the cable construction can withstand the effects of the short circuit current.

~~10.5.8~~ 10.5.9 All high voltage electric cables are to be readily identified by suitable marking.

### 10.8 Installation of electric cables

10.8.7 Cables having a bare metallic screen, braid or armour are to be installed in such a manner that galvanic corrosion by contact with other metals is prevented. Sufficient measures are also to be taken to prevent damage to any bare galvanised coatings during installation.

10.8.8 Consideration is to be given to providing adequate protection for cable oversheaths in areas where cables are likely to be exposed to damaging substances under normal circumstances or areas where the spillage or release of harmful substances is likely.

*Existing paragraphs 10.8.7 to 10.8.15 have been renumbered 10.8.9 to 10.8.17.*

~~10.8.15~~ 10.8.17 a.c. wiring is to be carried out using multi-core cables wherever reasonably practicable. Where it is necessary to install single core electric cables for alternating current circuits in excess of 20 Amps the requirements of 10.13 are to be complied with, ~~see also 10.5.6~~ 10.5.7.

### 10.14 Electric cable ends

10.14.1 Where screw-clamp or spring-clamp type terminations are used in electrical apparatus for external cable connections (see ~~1.10.6~~ 1.10.7), cable conductors of the solid or stranded type may be inserted directly into the terminals. Where flexible conductors are used, a suitable termination is to be fitted to the cable conductor to prevent 'whiskering' of the strands.

## ■ Section 14 Navigation and manoeuvring systems

### 14.3 Navigation lights

14.3.4 For navigation lights using light emitting diodes (consisting of multiple light sources) means to ensure that the overall luminous intensity of the navigation light is sufficient are to be provided in addition to the alarm to indicate the complete loss of the navigation light illumination required by 14.3.3. For replacement navigation lights, see 1.4.4.

14.3.5 To satisfy 14.3.4, an audible and visual alarm is to be activated to notify the Officer of the Watch that the luminous intensity of the light reduces below the level required by the IMO Convention on the International Regulations for Preventing Collisions at Sea. Alternative measures to ensure continuing acceptable performance of navigation lights using light emitting diodes may be considered that are in accordance with:

- IMO Res. MSC.253(83), *Performance Standards for Navigation Lights, Navigation Light Controllers and associated Equipment*, and
- EN 14744, *Inland navigation vessels and sea-going vessels – Navigation light*, or a relevant National or International Standard.

Where alternative measures are proposed that require periodic verification by personnel of the luminous intensity of navigation lights using light emitting diodes, details of the inspection implementation in the ships safety management system and acceptance by the National Administration requirements are to be submitted for consideration.

~~14.3.4~~ 14.3.6 Provision is to be made on the navigating bridge for the navigation lights to be transferred to an alternative circuit fed from the main source of electrical power.

~~14.3.5~~ 14.3.7 Any statutory requirements of the country of registration are to be complied with and may be accepted as an alternative to the above.



## Section 16

### Fire safety systems

#### 16.1 Fire detection and alarm systems

16.1.3 The fire detection system systems within the accommodation spaces and cabin balconies are, in addition to the requirements of Chapter 1, as applicable, to comply with 16.1.4 to 16.1.15.

16.1.16 Where it is intended that detectors be installed in external locations, e.g. cabin balconies, in addition to meeting the requirements for an environmental category suitable for open decks (see Ch 1, 2.8.8), they are also to be tested for sun irradiation and ultraviolet exposure with satisfactory results.

#### 16.3 Fixed water-based local application fire-fighting systems

16.3.1 Where fixed water-based local application fire-fighting system pressure sources are reliant on external power they need only be supplied by the main source of electrical power. However, where the system forms a section of the main fixed fire extinguishing system the power supply arrangements are to be equivalent to those required by 16.2.2.

16.3.4 Means to activate a system are to be located at easily accessible positions inside and outside the protected space. Arrangements inside the space are to be situated such that they will not be cut off by a fire in the protected areas and are suitable for activation in the event of escape. Proposals to install local activation means outside protected spaces are to be submitted for consideration. Where it is proposed to install local activation means outside of the protected space, details are to be submitted for consideration.

16.3.5 For the electrical safety of electrical and electronic equipment in areas protected by fixed water-based local application, fire-fighting systems and adjacent areas where water may extend, the requirements of 16.3.6 to 16.3.8 16.3.10 apply.

16.3.6 Unless essential for safety or operational purposes, electrical and electronic equipment is not to be located within protected areas or adjacent areas. As far as is practicable, electrical and electronic equipment is not to be located within protected areas or adjacent areas. The system pump, its electrical motor and the sea valve if any, may be in a protected space provided that they are outside areas where water or spray may extend.

16.3.7 Electrical and electronic equipment located within protected areas and those within adjacent areas exposed to direct spray are to have a degree of protection not less than IP44.

16.3.8 Electrical and electronic equipment within adjacent areas not exposed to direct spray may have a lower degree of protection than IP44 provided evidence of suitability for use in these areas is submitted, including details of the design and equipment layout and arrangements to prevent or restrict the ingress of water mist/spray. Cooling airflow for equipment is to be assured.

16.3.7 High voltage equipment and their enclosures are not to be installed in protected areas or adjacent areas. For high voltage generators enclosures which cannot be fully located outside of adjacent areas due to close proximity, a technical justification, including proposed degree of protection ratings that are normally not to be lower than IP54, may be submitted for consideration that demonstrates the overall safety of the installation in the event of system operation.

16.3.8 In addition to the degree of protection requirements of 1.10.1, electrical and electronic equipment enclosures located within protected areas and within adjacent areas are to provide adequate protection in the event of system operation.

16.3.9 To demonstrate compliance with 16.3.8, evidence of the suitability of electrical and electronic equipment for use in protected areas and adjacent areas is to be submitted in accordance with 1.2.9. The evidence is to demonstrate that additional precautions have been taken, where necessary, in respect of:

- (a) satisfying 16.3.6 and 16.3.7;
- (b) personnel protection against electric shock;
- (c) cooling airflow, where necessary, for equipment required to operate during system operation; and
- (d) maintenance requirements for equipment before return to operation following system activation.

Any test evidence submitted is to consider the overall installation, including equipment types, system configuration and nozzles and the potential effects of airflows in the protected space.

16.3.10 The evidence required by 16.3.9 is to demonstrate the safe and effective operation of the overall arrangements in the event of system operation. This evidence is to demonstrate that exposure to system spray and/or water:

- cannot result in loss of essential services (i.e. unintended activation of automatic machinery shut-down due to sensor failure);
- cannot result in loss of availability of emergency services;
- will not affect the continued safe and effective operation of electrical and electronic equipment required to operate during the required period of system operation;
- does not present additional electrical or fire hazards; and
- would require only identified readily replaceable components to be repaired or replaced.

The installation of electrical and electronic equipment required to provide essential or emergency services in enclosures with a degree of protection less than IP44 within areas exposed to direct spray is to be acceptable to LR, and evidence of suitability is to be submitted accordingly.

## Part 16, Chapter 2

16.3.11 Fixed water-based local application fire-fighting system electrically-driven pumps may be shared with:

- equivalent automatic sprinkler systems;
- equivalent main machinery space fire-fighting systems; or
- local fire-fighting systems for deep-fat cooking equipment;

provided that the shared use is accepted by the National Administration as complying with applicable statutory regulations and the arrangements comply with the requirements of 16.3.12 to 16.3.14.

16.3.12 Shared electrically-driven sea-water pumps are to be served by not less than two circuits reserved solely for this purpose, one fed from the main source of electrical power and one from the emergency source of electrical power. Such feeders are to be connected to an automatic changeover switch situated near the pumps and the switch is to be normally closed to the feeder from the main source of electrical power. No other switches are permitted in the feeders. The switches on the main and emergency switchboards are to be clearly labelled and normally kept closed.

16.3.13 Failure of a component in the power and control system is not to result in a reduction of the total available pump capacity below that required by any of the areas which the system is required to protect. For equivalent automatic sprinkler systems, a failure is not to prevent automatic release or reduce sprinkler pump capacity by more than 50 per cent.

16.3.14 Where fire-fighting systems share fire-fighting pumps, failure of one system is not to prevent activation of the pumps by any other system.

### 16.6 Fire safety stops

16.6.6 In passenger craft carrying more than 36 passengers with main laundries, any fire dampers required to be fitted at the lower end of the laundry exhaust ducts by relevant statutory regulations are to be fitted with additional remote-control arrangements for shutting off the exhaust fans and supply fans and operating the fire dampers from within the space.

*Existing paragraphs 16.6.6 to 16.6.11 have been renumbered 16.6.7 to 16.6.12.*

~~16.6.11~~ 16.6.12 Additionally, Passenger (B) high speed craft are to be provided with the means required by ~~16.6.10~~ 16.6.11 at one or more alternative stations separate from the bridge area. See also Ch 1,2.6.7.

### 16.8 Fire dampers

16.8.3 In passenger craft carrying more than 36 passengers with main laundries, any fire dampers required by relevant statutory regulations to be fitted at the lower end of exhaust ducts from any main laundries are to be capable of automatic and remote operation.

## Section 19

**Cargo craft, patrol and pilot craft, workboats and other similar craft of less than 500 tons gross tonnage for operation in Service Groups 1 to 3, and yachts less than 500 gt**

### 19.1 General requirements

19.1.4 Alternative arrangements, including those in accordance with IEC 60092-507:2008-01, *Electrical installations in ships – Small vessels*, or a relevant International or National Standard acceptable to LR may be considered ~~will be given~~ special consideration.

Section numbering in brackets reflects any Section renumbering necessitated by any of the Notices that update the current version of the Rules for Special Service Craft.

### **Part 6, Chapter 2**

Table 2.3.1      *Reference 3.17.10 now reads 3.5.3.*

### **Part 7, Chapter 2**

Table 2.3.1      *Reference 3.17.10 now reads 3.7.3.*

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